



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/580,506

01/26/2007

Yasuyoshi Kato

KAWZ 200115

2342

27885

7590

04/06/2009

Fay Sharpe LLP

1228 Euclid Avenue, 5th Floor

The Halle Building

Cleveland, OH 44115

EXAMINER

JONES, CHRISTOPHER P

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

04/06/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|---|------------------------------------|--|
| Office Action Summary | Application No. 10/580,506 | Applicant(s) KATO ET AL. | |
| | Examiner CHRISTOPHER P. JONES | Art Unit 1797 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 5, 11 and 17-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-10, 12-16 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 1-4, 6-10, 12-16 and 20, in the reply filed on 03/10/2009 is acknowledged.
2. Claims 5, 11 and 17-19 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected product, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 03/10/2009.
3. The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

4. Claims 1 and 8 are objected to because of the following informalities: "a pair of corrugated plate" on line 2 should be changed to "a pair of porous corrugated plates". Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
6. Claims 1-4, 6-10, 12-16 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
7. Regarding claim 1, the phrase "has a molding formed try stacking up the pairs of the porous corrugated plate" is indefinite. It is unclear what has a molding. It is also

Art Unit: 1797

unclear what how stacking up the plates would form a molding. It is also unclear whether this limitation is requiring multiple pairs of porous corrugated plates, or is referring just to the first pair of porous corrugated plates.

8. Regarding claim 1, the phrase “and one of side surfaces perpendicularly crossing said corrugated plate ridge lines, of the molding or mutually-adjoining two surfaces that are the perpendicularly-crossing side surfaces are seals, so that exhaust gas in-flow passage and out-flow passage are respectively formed between said porous corrugated plates via the porous flat plate” is indefinite. It is unclear whether “one of side surfaces” is referring to a side surface of the flat plate, or a side surface of a corrugated plate. The wording of this phrase also makes it unclear what are the seals. It is unclear whether or not the molding and mutually-adjoining two surfaces are one and the same.

9. Claims 3, 4 and 16 recite the limitation “oxidizing catalyst”. There is insufficient antecedent basis for this limitation in these claims.

10. Regarding claim 8, the phrase “wherein one of the surfaces crossing perpendicularly with said corrugated plate ridge line of the molded body or two surfaces that are side surfaces crossing perpendicularly with said corrugated plate ridge line and are adjacent to each other are sealed” is indefinite. It is unclear whether “of the molded body” is referring to the “surfaces” or the corrugated plate ridge line. Examiner recommends the use of commas to clear up the indefiniteness.

11. Regarding claim 8, the phrase “wherein an oxidizing catalyst ... is supported on both surfaces of the porous corrugated plate and on one surface of the porous flat plate which is in contact with the porous corrugated plate” is indefinite. It is unclear whether

Art Unit: 1797

the oxidizing catalyst is supported on both corrugated plates or both surfaces of one corrugated plate.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by *Yajima* JP 2001-276573 [translation].

14. Regarding claim 1, *Yajima* discloses a particulate matter exhaust gas purifying filter (paragraph 1) with a pair of porous (paragraph 1) corrugated plates (drawings 4-6) and a porous (paragraph 1) flat plate that supports an exhaust gas purifying catalyst (drawings 4-6). *Yajima* discloses a molding formed by stacking up the pairs of the porous corrugated plate and the porous flat plate such that the ridge lines of the porous corrugated plates alternately cross perpendicularly, and one of side surfaces perpendicularly crossing said corrugated plate ridge lines, of the molding or mutually-adjoining two surfaces that are the perpendicularly-crossing side surfaces are sealed, so that exhaust gas in-flow passage and out-flow passage are respectively formed between said porous corrugated plates via the porous flat plate (drawings 4-6).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 2-4, 9, 10, and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Yajima* JP 2001-276573 [translation] in view of *Hioki* JP 2001-149451 [translation].

17. *Yajima* is relied upon as above.

18. Regarding claims 2, 4, and 15 *Yajima* does not explicitly disclose that the exhaust gas purifying catalyst is the oxidizing catalyst titanium oxide.

19. *Hioki* discloses a similarly designed exhaust gas purifying filter (see *Hioki* drawing 1) with the oxidizing catalyst titanium oxide (see *Hioki* paragraph 13). *Hioki* discloses that the oxidizing catalyst titanium oxide is well suited for removal of deleterious material (see *Hioki* paragraph 13).

20. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the filter, of *Yajima*, with the filter containing the oxidizing catalyst titanium oxide, of *Hioki*, for the purpose of increasing the filters ability to remove deleterious material.

21. Regarding claims 3, 14, and 16, *Yajima* in view of *Hioki* does not expressly state the use of platinum as the oxidizing catalyst. Nevertheless, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use platinum as a

Art Unit: 1797

catalyst since it is known in the art that platinum is a suitable oxidizing catalyst. MPEP 2144.03 (A-E).

22. Claim 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Yajima* JP 2001-276573 [translation] in view of *Gomyo* JP 11-294138 [translation].

23. *Yajima* is relied upon as above.

24. Regarding claims 6 and 7, *Yajima* does not explicitly disclose a means for introducing exhaust gas into the in-flow passage and a means for interrupting the passage of gas discharged from the out-flow side, where the means for interrupting has a structure having a switching function of permitting or interrupting the passage of the gas.

25. *Gomyo* discloses an exhaust gas filter (see *Gomyo* paragraph 8) with a valve for introducing exhaust gas into an in-flow passage and a means for interrupting the passage of gas discharged from an out-flow side, where the valve has a structure having a switching function of permitting or interrupting the passage of the gas (see *Gomyo* figures 4 and 5; paragraph 19). *Gomyo* discloses that the use of this design increases efficiency of gas filtration (see *Gomyo* paragraphs 6-8).

26. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the filter, of *Yajima*, with the filter having a valve for introducing exhaust gas into an in-flow passage and a means for interrupting the passage of gas discharged from an out-flow side, where the valve has a structure

Art Unit: 1797

having a switching function of permitting or interrupting the passage of the gas, of *Gomyo*, for the purpose of increasing efficiency of the gas filtration.

27. Claims 8-10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Yajima* JP 2001-276573 [translation], in view of *Hioki* JP 2001-149451 [translation], in further view of *Murachi* USPN 5,746,989.

28. *Yajima* in view of *Hioki* is relied upon as above.

29. Regarding claims 8-10 and 20, *Yajima* in view of *Hioki* does not explicitly disclose an oxidation catalyst in an inflow side with no oxidation catalyst in the outflow side of the flow path.

30. *Murachi* discloses an exhaust gas filter with an oxidation catalyst in the inflow side, but not in the outflow side (see *Murachi* figure 1; column 3, lines 35-42). *Murachi* discloses that the oxidation catalyst is on the inflow side so that the nitrogen dioxide can be captured in the filter.

31. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the filter, of *Yajima* in view of *Hioki*, with the filter having an oxidation catalyst only in the inflow side, and not in the outflow side, of *Murachi*, for the purpose of removing all nitrogen dioxide formed, and not allowing any of it to escape into the atmosphere.

32. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Yajima* JP 2001-276573 [translation], in view of *Hioki* JP 2001-149451 [translation],

Art Unit: 1797

in further view of *Murachi* USPN 5,746,989, and in further view of *Gomyo* JP 11-294138 [translation].

33. *Yajima*, in view of *Hioki*, in further view of *Murachi* is relied upon as above.

34. Regarding claims 12 and 13, *Yajima*, in view of *Hioki*, in further view of *Murachi* does not explicitly disclose a means for introducing exhaust gas into the in-flow passage and a means for interrupting the passage of gas discharged from the out-flow side, where the means for interrupting has a structure having a switching function of permitting or interrupting the passage of the gas.

35. *Gomyo* discloses an exhaust gas filter (see *Gomyo* paragraph 8) with a valve for introducing exhaust gas into an in-flow passage and a means for interrupting the passage of gas discharged from an out-flow side, where the valve has a structure having a switching function of permitting or interrupting the passage of the gas (see *Gomyo* figures 4 and 5; paragraph 19). *Gomyo* discloses that the use of this design increases efficiency of gas filtration (see *Gomyo* paragraphs 6-8).

36. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the filter, of *Yajima*, in view of *Hioki*, in further view of *Murachi*, with the filter having a valve for introducing exhaust gas into an in-flow passage and a means for interrupting the passage of gas discharged from an out-flow side, where the valve has a structure having a switching function of permitting or interrupting the passage of the gas, of *Gomyo*, for the purpose of increasing efficiency of the gas filtration.

Conclusion

37. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER P. JONES whose telephone number is (571)270-7383. The examiner can normally be reached on Monday - Thursday, 8:00 AM - 5:00 PM.

38. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571)272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

39. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. P. J./
Christopher P. Jones
Examiner, Art Unit 1797

/Frank M. Lawrence/
Primary Examiner, Art Unit 1797